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ABSTRACT

School design is influenced by four major factors: the education program, the community site, education technology, and building technology. Schools of the future are discussed in relation to the factors affecting school design. It is probable that future schools will be involved in a broader spectrum of programs and will serve a more diverse population. As a result, school design will be a more complex challenge. Schools of the future will include child development centers and alternative schools. The community school will serve as a cultural and recreational center that provides facilities for child care, senior citizens, and adult education. Current design innovations include high schools using the "Shopping Mall Concept" and renovations and restorations of older buildings that are important to the community. The diversity of climates and geography in the different regions of our country engenders diversity in building materials and traditions. Thoughtful planning and good design ensures success in future educational facilities. (MD)

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THE FUTURE OUTLOOK FOR SCHOOL FACILITIES PLANNING AND DESIGN

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EQUITY AND EXCELLENCE

The goals for American education - equity and excellence - have become goals for facilities, too. State and federal programs have redistributed income to give all students more equal education - and more equal resources for school buildings and equipment.

Therefore, the available resources for creating schools now vary less than in the past, and this will also be true in the future. The planners and designers of schools will have a special challenge - to use the resources in the most imaginative and most appropriate manner. Creativity will be the key ingredient in excellence, since the amount of money available per student will not vary much in the future.

Tomorrow's school, at its best, will be a place for TLC - not just tender loving care - but a place for Thinking, Learning, and Creating - as John Naisbitt points out in his latest book. The excellent school will provide the learning environment where thinking, learning, and creating can thrive.

PLURALISM AND INDIVIDUALISM

That lofty goal - equity - like all goals, could have dangerous side effects. In making the available resources more equal, we must take care to avoid making all schools identical. School facilities should vary in character as they respond to local differences in climate, geography, neighborhood, and local need.

We are a pluralistic society and we are a hugh and diverse nation. One single solution is seldom the answer to the needs of two schools. This is especially true when we consider architecture for education, because buildings must respond not only to program, but to the unique characteristics of each site and each neighborhood. School sites are like snowflakes and like people - no two are identical.

School planners and designers in the future must also be attentive to the idea that each individual student is unique, and has special abilities and needs. Tomorrow's school will not be highly regimented with rows of identical classrooms. The many concepts we explore in the following sections testify to the fact that school design is changing. Since buildings can be used for many generations, the need is for adaptability, for flexibility. Programs will change, so spaces must change. Not only details of programs and kinds of equipment will change, but basic philosophies of education may change.

Dr. Leu discussed a fundamental basic issue: "Shall American public education continue as Jeffersonian or change to a Hamiltonian (European Pyramid) system?" That debate will continue. Meanwhile, how should we design our school buildings? The answer is to provide facilities which enjoy a high degree of flexibility, allowing them to adapt easily to different philosophies and different programs.

SCHOOL DESIGN INFLUENCES

School design will be influenced by four major factors:

1. The education program will be a prime factor. The program scope and content, the methods of teaching and learning, and the size of groups will determine the space requirements. The architect will then create a design concept, but it should not be based on program alone, but with consideration of the three other major factors.

2. The community and site will influence design. Each community and each site, as noted earlier, is unique. Local custom, neighbors, traffic, orientation, soil conditions, climate, views, access, etc. will suggest particular design solutions.

3. Education technology will impact the design of tomorrow's school.

4. Building technology also changes, so tomorrow's school will utilize architectural, structural, mechanical and electrical systems that are only evolving today.

EDUCATION TECHNOLOGY

As is true with the modern office, bank, laboratory, hospital, store, and factory, the new electronic and other technology will change school design. The computer, word processor, television, office machines, control devices, etc. are altering the way we learn, work and manage our affairs.

"Computer literacy" is a common term. The "information society" challenges the primacy of the industrial society. Different kinds of things will be learned, and learned in new ways, using new kinds of equipment.

School design can learn from the modern office building. The building is a long-term investment, so it must provide adaptable space for unknown future tenants. The equipment, on the other hand, changes rapidly - and requires electrical services, and communication channels.

We will be planning schools which provide that kind of flexibility.

SCIENCE, MATH, ENGLISH, FOREIGN LANGUAGES, SOCIAL SCIENCES, PHYSICAL EDUCATION, THE ARTS, AND VOCATIONAL-TECHNICAL - COMPETING FOR ATTENTION

Educational program emphasis changes from time to time. International events can increase interest (and money) in math and science. English and foreign languages

enjoy new attention. Ditto the social sciences and the arts. Vocational-technical education is always being re-evaluated. We can expect such competition for school time and resources to continue. This is another persuasive argument for adaptability.

Regardless of how curriculum evolves, we see the library (or resources center, or whatever new name develops) continuing as a central facility serving the school of the future.

The library will make electronic and computer resources available too, but hopefully books and periodicals will also survive. Browsing - and reading - are here to stay.

The library - and the entire school - may also find new ways to develop students' intuition and vision, in addition to teaching facts and concepts.

THE BROADENING SPECTRUM

The school of tomorrow will involve a broader spectrum of the programs, people, places, and things of education.

The programs of education compete for time and attention; philosophies compete (from "Back-to-Basics" to demands for more vocational-technical education). One solution to these varied and pluralistic demands may be to recognize the need for different kinds of schools (recognizing the dangers noted by Dr. Leu).

The people of education will be more diverse; in addition to certificated teachers, expect more visiting specialists, aides, etc.

The places of education will be broader; in addition to the "schoolhouse," the resources of the community will be used more often.

The things of education will be more complex, with the computer leading the way.

Therefore, school design in the future will be a more complex challenge. Linkages (especially electronic) to other facilities are inevitable.

LIFELONG LEARNING

The tidy organizational structures of yesterday are doomed. Children will be going to school at an earlier age, and more adults will be continuing their education throughout their lives.

The "adult boom" has already brought many adults back to college and university campuses, the community college has become the educational bridge between the high school and the university, and the need for early childhood education will be a hot topic in the next few years.

THE COMMUNITY COLLEGE REVOLUTION

Our community college system was built mainly in the 1960's and 1970's. Being responsive to local need, they serve many important functions, and they are generally quite accessible to people. A typical city-and-country system consists of a number of campuses around the perimeter of a city, along with a central campus downtown.

The architecture of the community colleges is frequently imaginative and unique to the community. These campuses will continue to be important components of the lifelong learning resources of the country.

THE CHILD DEVELOPMENT CENTER

For the early years, (as from two to five), new facilities will be planned. Early childhood education and day care have often been provided by private centers. Now, school districts are more interested in extending the school years downward by providing early childhood education.

I have been working with Dr. Robert Finley, Superintendent of Schools, Glen Cove, Long Island. We are planning a new child development center at a park-like central location in Glen Cove, which will serve 400 children in groups of 20 students (four such groups making a pod for 80); the five pods are also served by small, multi-purpose rooms, and a central "hub" for the director, parents, a library, kitchen, etc.

ALTERNATIVE SCHOOLS

Many schools will continue to be comprehensive neighborhood schools, but our pluralistic society will demand many special schools, too - alternative schools for students who need special attention, schools for gifted and talented pupils, magnet schools which offer specialized programs in the arts, science, or business, vocational-technical centers (to which students may go part-time, maintaining their attendance at a comprehensive high school), schools-without-walls, and other kinds of experimental facilities.

We will welcome that kind of diversity.

THE COMMUNITY SCHOOL

It's still going to be a good idea - the neighborhood school which also serves as a community center, providing services to adults, too.

The community school will be the community cultural and recreation center, will include facilities for child care, senior citizens, and adult education.

Since adults use the facilities, they will be interested in and supportive of the educational program.

THE MALL CONCEPT

A recent study noted that the "Shopping Mall High School" (which may even look a bit like a shopping mall) offers something for everyone, was critical of such a school, believing it does not stress mastery of academic subjects.

Well, for better or worse, high schools (and community colleges) have embraced the mall concept.

I have designed a student mall for the Robert Morgan Vocational-Technical Institute in Dade County, Florida. The roofed but open-air (not air-conditioned) mall serves as the focal point and social space for the school. It is also the assembly place, exhibition hall, dining room, and circulation space. It works!

In the future, the idea will compete with other design ideas. We should not hastily discard the concept.

OUR HERITAGE

Also, we should not hastily discard our old buildings. Americans have rediscovered fine old buildings. When they are skillfully restored, they can be a joy to work in, live in - and go to school in!

Colleges and universities have successfully restored their old buildings. Next, school districts will restore some of the fine old buildings of the late 19th Century and early 20th Century. When you have an "old gem," look at its possibilities!

RENOVATION AND RESTORATION

Not all old buildings are worthy of preservation. Judgment is necessary. But when an old school is potentially handsome and structurally sound, then sensitive design and skillful restoration can bring new life to the old building.

Bloomfield Hills, Michigan serves as a good example of renovating "modern" buildings. Their post-World-War II high schools were good examples of the state-of-the-art when built. But like all buildings, some parts had worn out, some equipment was obsolete, and needs had changed. We were commissioned, not to make the schools larger, but to make them better - to bring them up-to-date. First, a master plan for improvements was prepared, working with faculty and administration. Then, specified spaces were improved. The program included arts facilities, better space for music, new food service, improved corridors and new graphics, and external improvements, including landscaping.

One interesting design assignment was to create a learning environment that was less like a junior high school and more like a college. We are undoubtedly going to see more of our substantial older buildings restored in a sensitive manner, adding generations of usefulness.

BUILDING TECHNOLOGY

The idea of restoring an old gem is appealing. While preserving the strong architectural character may be the appropriate design goal, new mechanical and electrical systems will be necessary.

When new buildings are needed, not only will new mechanical and electrical systems influence design, but new architectural and structural concepts will generate entirely new forms.

Architectural systems will include electrified floors, moveable walls, and new kinds of roofs.

Structural systems will vary, depending on local materials and customs. Wood construction will continue to be welcomed in California and the Pacific Northwest, but concrete construction will be more appropriate in Florida. Sometimes, exotic new building techniques will be used; these new building methods will then compete with the old established methods.

Mechanical systems will be planned for energy efficiency, and electrical systems will embrace new lighting, communications and power distribution concepts, creating "the intelligent building."

In recent years, not many new schools have incorporated innovative design concepts, but we can expect to see some exciting new concepts in the near future.

AMERICAN PLANNING AND DESIGN INFLUENCE AROUND THE WORLD

Many American educators, engineers, planners, and architects will continue to work on projects in all parts of the world. For example, Perkins & Will has designed educational facilities in Mexico, Egypt, Greece, Iran, Iraq, Saudi Arabia, Malaysia and Indonesia.

Representatives from dozens of countries visit American and Canadian schools and admire their programs, their buildings, their equipment, and their generally high quality. These people will continue to want to learn how we do it, and they want our help.

Although we may export less steel and automobiles, we will continue to export knowledge and experience in school design.

THE QUEST FOR QUALITY

Years ago, many areas experienced an unfortunate happening in school design: the attempt to build as cheaply as possible. Happily, now, the trend is more often to demand better quality (which, in the long run, of course, means true economy). People will want good schools and they will want better school buildings.

Irvine, California wanted, and got, superior schools. Everyone won - the developers, the business people, the citizens and the kids! When Irvine's population matures, the surplus schools are going to make mighty handsome offices, shops or apartments.

RE-USE OF SURPLUS SCHOOL SPACE

Surplus school space, the product of demographic change, has been and will be re-used to provide space for other schools (as community colleges), community schools, community centers, art centers, art studios, community offices, human services, health care facilities, commercial shops, commercial offices, and apartments.

Re-use need not be restricted to only one function. The mixed-use development idea will be popular, and users will change from time to time, just as tenants change in an office building.

REGIONALISM

We live in a large country which has great diversity in climate and geography, culture and custom. Different regions have great variety in local building traditions, and in local materials and building techniques.

Great variety in architecture is appropriate. A school building suitable for New England will not be suitable for Southern California. A good Alaska building would be absurd transferred to Florida. An inner-city school in Chicago should be quite different from a rural school in Iowa or Texas.

I have recently had the opportunity to plan a new high school for Santa Fe, New Mexico. Our design intent was to create a Santa Fe building - using the spaces, materials, forms, and colors which are unique to Santa Fe. Working in association with a Santa Fe firm, Mimbres, Inc., we planned the high school around a central plaza, incorporated other courtyards, portals, and used local materials and colors. We adopted the "Territorial Style" - an architectural style which is special to Santa Fe. In other words, we have not only accepted, but have celebrated the culture of Santa Fe.

THE IMPORTANCE OF GOOD SCHOOLS - TO COMMUNITIES - TO BUSINESS - TO PEOPLE

Competition is a fact of life. Communities compete with other communities and quality schools are one of the most important factors in offering a desirable "quality of life."

Every business competes with other businesses, and businesses now more often demand good schools - to gain more able employees - and to attract talented people to their communities. Good schools are good business.

Most important, people demand quality schools. People recognize the value of good schools (and good school facilities) and in the future they will be even more sensitive to this fact.

The prospects for future educational facilities are bright. Thoughtful planning and good design will be the keys to success. Whether for Jeffersonian or Hamiltonian programs, our schools will have to be adaptable. We hope each school will also have its own special and appropriate character - and we hope, for the benefit of students, teachers and all members of the community, that each school will be attuned to its own unique neighborhood and that each will be, in its own special way, beautiful.

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by C. William Brubaker